Appl. Serial No. : 10/621,803
Amendment dated May 10, 2006
Reply to Office Action of November 14, 2005

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the Application.

Listing of Claims:

1. (Currently amended) A device for amplifying and detecting a target nucleic acid, comprising:

a solid support **bead** having a surface;

at least one ~~a plurality of~~ species of amplification primer immobilized ~~substantially uniformly over~~ **to** said surface, ~~thereby defining a field of immobilized primers, said plurality of~~ **said at least one** species of amplification primer comprising a first amplification primer that comprises a sequence complementary to a first strand of said target nucleic acid; and

at least one ~~a plurality of~~ species of labeled hybridization ~~probes~~ **probe** immobilized to **said surface** ~~the solid support within said field of immobilized primers~~,

wherein at least one of said ~~plurality of~~ **at least one** species of labeled hybridization ~~probes~~ **probe** comprises a sequence complementary to an amplicon synthesized using said first amplification primer ~~from said field of immobilized primers~~ and said target nucleic acid as a template in a nucleic acid amplification reaction, **and**

~~wherein no portion of said surface of said solid support is excluded from occupation by an immobilized oligonucleotide, said device having been manufactured by a process comprising immersion of said surface in a liquid composition comprising immobilizable oligonucleotide primers, and~~

wherein each of said ~~plurality of samples of~~ **at least one** labeled hybridization ~~probes~~ **probe** comprises a detectable label prior to contacting said device with any

nucleotide polymerizing enzyme.

2. (Original) The device of Claim 1, wherein said surface comprises a material selected from the group consisting of glass and plastic.

3. (Currently amended) The device of Claim 2, wherein each of said ~~plurality of species of~~ **at least one** amplification primer immobilized ~~substantially uniformly over~~ **to** said surface is immobilized covalently.

4. (Currently amended) The device of Claim 2, wherein each of said **at least one** ~~plurality of~~ species of labeled hybridization ~~probes~~ **probe** is immobilized covalently.

5. (Currently amended) The device of Claim 2, wherein each of said **at least one** ~~plurality of~~ species of amplification primer and each of said **at least one** ~~plurality of~~ species of labeled hybridization **probe** ~~probes~~ is immobilized covalently.

6. (Previously presented) The device of Claim 5, further comprising at least one soluble amplification primer complementary to an opposite strand of said target nucleic acid, said first strand and said opposite strand of said target nucleic acid being complementary to each other.

7. (Currently amended) The device of Claim 1, wherein each of said **at least one** ~~plurality of~~ species of labeled hybridization **probe** ~~probes~~ comprises a fluorophore moiety and a quencher moiety.

8. (Canceled)

9. (Currently amended) The device of Claim 6, wherein at least one of said **at least one** ~~plurality of~~ species of amplification primer immobilized **to** ~~substantially uniformly over~~ said surface comprises a promoter sequence for an RNA polymerase.

10-18. (Canceled)

19. (Currently amended) A kit for detecting a target nucleic acid, comprising:

a device in accordance with Claim 1;

a soluble oligonucleotide primer; and

a positive-control nucleic acid amplifiable in a nucleic acid amplification reaction using at least one of said **at least one** ~~plurality of~~ species of amplification primer immobilized **to** ~~substantially uniformly over~~ said surface in combination with said soluble oligonucleotide primer.

20-31. (Canceled)

32. (Currently amended) The device of Claim 1, wherein said ~~plurality of~~ **at least one** species of labeled hybridization ~~probes~~ **probe** comprises no more than two species of labeled hybridization probes.

33-34 (Canceled)

35. (Currently amended) The device of Claim 32, wherein said **at least one** ~~plurality of~~ species of amplification primer comprises no more than a single species of amplification primer having a free 3' terminus available for extension by a DNA polymerase activity.

36-37 (Canceled)

38. (Currently amended) The device of Claim 1, wherein said **at least one** ~~plurality of~~ species of amplification primer comprises no more than a single species of amplification primer having a free 3' terminus available for extension by a DNA polymerase activity.

39. (Currently amended) A reaction mixture, comprising a liquid composition in contact with said surface of the solid support of the device of Claim 1, said liquid composition comprising a pH buffer, a DNA polymerizing enzyme, and deoxyribonucleotide triphosphate precursors of DNA,

wherein each of said **at least one** ~~plurality of~~ species of amplification primer and each of said **at least one** ~~plurality of~~ species of labeled hybridization **probe** ~~probes~~ immobilized to said surface of said solid support is in fluid communication with the others, there being no physical barrier therebetween.

40. (Previously presented)The reaction mixture of Claim 39, wherein said liquid composition further comprises ribonucleotide triphosphate precursors of RNA, and an RNA polymerizing enzyme.

41. (Previously presented)The reaction mixture of Claim 40, wherein said RNA polymerizing enzyme is T7 RNA polymerase.

42. (Previously presented)The reaction mixture of Claim 39, wherein said DNA polymerizing enzyme is a reverse transcriptase.

43. (Previously presented)The reaction mixture of Claim 42, wherein said reverse transcriptase is MMLV reverse transcriptase.